

**What is claimed is:**

1           1.    A transformer comprising:  
2           an iron core structure;  
3           a first bobbin comprising a first hollow portion and a  
4                 second hollow portion, wherein the iron core  
5                 structure passes through and surrounds the first and  
6                 second hollow portions;  
7           a first primary coil wound on the first hollow portion;  
8           a first secondary coil wound on the second hollow portion;  
9           a second bobbin comprising a third hollow portion and a  
10                 fourth hollow portion, wherein the iron core  
11                 structure passes through and surrounds the third and  
12                 fourth hollow portions;  
13           a second primary coil wound on the third hollow portion;  
14                 and  
15           a second secondary coil wound on the fourth hollow portion.

1           2.    The transformer as claimed in claim 1, wherein the  
2           first bobbin is disposed substantially parallel to the second  
3           bobbin.

1           3.    The transformer as claimed in claim 1, wherein the  
2           density of the windings on the second and fourth hollow portions  
3           exceeds that on the first and third hollow portions.

1           4.    The transformer as claimed in claim 1, wherein the  
2           iron core structure comprises a first core portion, a second core  
3           portion and a third core portion, the first core portion passes  
4           through the first bobbin, the second core portion passes through

5 the second bobbin, and the third core portion surrounds the first  
6 and second bobbins.

1 5. The transformer as claimed in claim 1, wherein the  
2 first bobbin further comprises a first protrusion to separate  
3 the first and second hollow portions, and the second bobbin  
4 further comprises a second protrusion to separate the third and  
5 fourth hollow portions.

1 6. The transformer as claimed in claim 1, further  
2 comprising an insulating cover disposed on the first and second  
3 bobbins.

1 7. The transformer as claimed in claim 1, wherein the  
2 insulating cover comprises a separating plate to separate the  
3 first and second bobbins.

1 8. The transformer as claimed in claim 1, wherein the  
2 first bobbin further comprises a first engaging portion and the  
3 second bobbin further comprises a second engaging portion, and  
4 the first engaging portion engages the second engaging portion  
5 to connect the first bobbin with the second bobbin.

1 9. The transformer as claimed in claim 8, wherein the  
2 first engaging portion comprises a protruding portion and the  
3 second engaging portion comprises a matching recessed portion,  
4 and the protruding portion and the matching recessed portion  
5 match up to each other.

1 10. The transformer as claimed in claim 8, wherein the  
2 first engaging portion is a matching recessed portion and the  
3 second engaging portion is a protruding portion, and the

4 protruding portion and the matching recessed portion match up  
5 to each other.

1 11. A transformer comprising:  
2 a plurality of bobbins disposed parallel to each other;  
3 a plurality of primary coils wound on one end of each  
4 bobbin;  
5 a plurality of secondary coils wound on the other end of  
6 each bobbin; and  
7 an iron core structure passing through and surrounding each  
8 bobbin.